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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,252	04/05/2005	Mark E Duggan	21144P	5496

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EXAMINER	
CHUNG, SUSANNAH LEE	
ART UNIT	**PAPER NUMBER**
1626	
MAIL DATE	**DELIVERY MODE**
01/16/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/530,252	DUGGAN ET AL.	
	Examiner	Art Unit	
	Susannah Chung	1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 November 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 19-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-9* is/are allowed.

6)☒ Claim(s) *10-13,15,16 and 19-22* is/are rejected.

7)☒ Claim(s) *14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/21/05, 7/13/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-16 and 20-22 are pending in the instant application. Claims 17-18 are canceled by preliminary amendment.

Priority

This application is a 371 of PCT/US03/34007, filed on 10/24/2003, which claims benefit of 60/422,307, filed 10/30/2002.

Information Disclosure Statement

The information disclosure statement (IDS), filed on 09/21/2005 and 07/13/2005 have been considered. Please refer to Applicant's copy of the 1449 submitted herewith.

Response to Election/Restrictions

Applicant's election without traverse of Group I in the reply filed on 11/09/2007 is acknowledged.

Claims 1-9 directed to an allowable product. Pursuant to the procedures set forth in MPEP § 821.04(B), claim 10-13, 15 and 19-22, directed to the process of making or using an allowable product, previously withdrawn from consideration as a result of a restriction requirement, are hereby rejoined and fully examined for patentability under 37 CFR 1.104.

Because all claims previously withdrawn from consideration under 37 CFR 1.142 have been rejoined, **the restriction requirement as set forth in the Office action mailed on 10/15/2007 is hereby withdrawn**. In view of the withdrawal of the restriction requirement as to the rejoined inventions, applicant(s) are advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double

patenting rejections over the claims of the instant application. Once the restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See *In re Ziegler*, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

Claim Rejections - 35 USC § 112, 1st paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 10-13, 19, and 20-22 are rejected under 35 U.S.C. 112, first paragraph, because the specification does not enable one skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims, for the reasons describe below.

As stated in MPEP 2164.01(a), "there are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue."

The factors to be considered when determining whether a disclosure meets the enablement requirement of 35 USC 112, first paragraph, were described in In re Wands, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988) as:

1. the nature of the invention;
2. the breadth of the claims;
3. the state of the prior art;
4. the relative skill of those in the art;
5. the predictability or unpredictability of the art;

6. the amount of direction or guidance presented [by the inventor];

7. the presence or absence of working examples; and

8. the quantity of experimentation necessary [to make and/or use the invention].

The eight Wands factors are applied to Claims 10-13, 19 and 20-22 of the present invention below:

(1) The Nature of the Invention

Claims 10-13, 19, and 20-22 are directed to methods of inhibiting Akt and treating and/or preventing cancer using the compound of formula (A) of claim 1.

(2) The Breadth of the claims

Claims 10-13, 19 and 20-22 will be give its broadest reasonable interpretation. The applicable rule for interpreting the claims is that "each claim must be separately analyzed and given its broadest reasonable interpretation in light of and consistent with the written description." See MPEP 2163(II)(1), citing In re Morris, 127 F.3d 1048, 1053-1054; 44 USPQ2d 1023, 1027 (Fed. Cir. 1997). In view of this rule, Claims 10-11, which do not specify a particular disorder will be interpreted to treat all disorders related to Akt. Claims 12-13, 19 and 20-22 will be interpreted to treat and prevent all types of cancer, regardless of whether it is a primary or secondary method of use.

(3) The state of the prior art

It was known in the art at the time of this application that inhibition of Akt in certain cases will be treat certain types of cancer (See Spec pages 57-62, Akt Kinase Assays). It was also well known in the art at the time of the application that the use of topoisomerase inhibitors in

chemotherapy can treat certain types of cancer. The use of the instantly claimed compounds to treat and prevent all types of cancer is not known.

(4) The relative skill of those in the art

The level of skill in the art (pharmaceutical chemists, physicians) would be high.

(5) The predictability or unpredictability of the art

It is noted that the pharmaceutical art generally is unpredictable, requiring each embodiment to be individually assessed for physiological activity. In cases involving unpredictable factors, such as most chemical reactions and physiological activity, the scope of enablement varies inversely with the degree of unpredictability in the factors involved. In re Fisher, 427 F.2d 833, 839. Therefore, the more unpredictable an area, the more specific enablement is needed in order to satisfy the statute. Added to the unpredictability of the art itself is the question whether Akt inhibition activity alone by one of the compound of the present invention could be reliably and predictably extrapolated to in vivo activity in patients with all types of cancer claimed. There is no absolute predictability, even in view of the high level of skill in the art.

(6) The amount of direction or guidance presented (by the inventor)

The specification in the present invention discloses that Akt inhibition plays an important role in *treating* certain types of cancer, but does not disclose which types of cancer. In addition, there is no guidance in the specification as to the patient population or the level of efficacy of the instantly claimed compounds in in vitro and in vivo models.

(7) The presence or absence of working examples

As noted in the previous section, the specification discloses the general role of the instantly claimed compounds in inhibiting Akt. However, the specification has no working examples, such as in vivo or in vitro studies.

(8) The quantity of experimentation necessary (to make and/or use the invention)

Given the absence of direction or guidance (or working examples) in the specification for the role of the compounds of claim 1, it would cause a skilled artisan an undue amount of experimentation to practice this invention to determine which patients with which diseases or types of cancer would benefit from which of the many claimed compounds within the scope of the invention with a reasonable expectation of success.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 16 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The terms 8, 9, 11, 12, 13, 14 and 15 are not defined in the specification, claims or drawings. Applicant is invited to point out where in the original specification, claims or drawings the terms are defined. If a proper definition cannot be found, then applicant may obviate this rejection by deleting the terms. The definitions for terms 1-7 and 10 can be found on pages 28-34 of the specification.

Claim Rejections - 35 USC § 112, 2nd paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP §2172.01. The omitted steps are the steps required to prepare the pharmaceutical composition. Reagents used and active steps of preparing the composition should be inserted into the claim. A claim is indefinite where it merely recites a use without any active positive steps delimiting how the use is actually practiced.

Compact Disc Submission

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). A computer readable form (CRF) of the sequence listing was submitted on 4/13/2005. However, the CRF could not be processed by the Scientific and Technical Information Center (STIC) for the reason(s) set forth on the attached CRF Diskette Problem Report.

Conclusion

The closest prior art of record is Genda et al., JP-54-16497, which teach similar heterocyclic compounds, but does not teach the N-heterocyclic off the phenyl ring.

Telephone Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susannah Chung whose telephone number is (571) 272-6098. The examiner can normally be reached on M-F, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph McKane can be reached on (571) 272-0699. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

REBECCA ANDERSON
PRIMARY EXAMINER

SLC

Rebecca Anderson
Primary Patent Examiner
Art Unit 1626, Group 1620
Technology Center 1600

Date: 10 January 2008

PCT

RAW SEQUENCE LISTING DATE: 04/13/2005
PATENT APPLICATION: US/10/530,252 TIME: 09:29:55

Input Set : A:\PTO.FG.txt
Output Set: N:\CRF4\04132005\J530252.raw

4 <110> APPLICANT: Merck & Co., Inc.
5 Duggan, Mark E.
6 Lindsley, Craig W.
7 Zhao, Zhijian
9 <120> TITLE OF INVENTION: Inhibitors of Akt Activity
12 <130> FILE REFERENCE: 21144
C--> 14 <140> CURRENT APPLICATION NUMBER: US/10/530,252
C--> 14 <141> CURRENT FILING DATE: 2005-04-05
14 <150> PRIOR APPLICATION NUMBER: 60/422,307
15 <151> PRIOR FILING DATE: 2002-10-30
17 <160> NUMBER OF SEQ ID NOS: 15
19 <170> SOFTWARE: FastSEQ for Windows Version 4.0

Does Not Comply
Corrected Diskette Needed

ERRORED SEQUENCES

177 <210> SEQ ID NO: 15
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182 <220> FEATURE:
183 <223> OTHER INFORMATION: Completely synthetic Amino Acid Sequence
185 <400> SEQUENCE: 15
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187 1 5 10
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